

HEART WALL ABLATION/MAPPING CATHETER AND METHOD

ABSTRACT OF THE DISCLOSURE

1 Steerable electrophysiology catheters for use in mapping and/or ablation of
2 accessory pathways in myocardial tissue of the heart wall and methods of use thereof are
3 disclosed. The catheter comprises a catheter body and handle, the catheter body having a
4 proximal section and a distal section and manipulators that enable the deflection of a distal
5 segment of the distal tip section with respect to the independently formed curvature of a
6 proximal segment of the distal tip section through a bending or knuckle motion of an
7 intermediate segment between the proximal and distal segments. [A wide angular range of
8 deflection within a very small curve or bend radius in the intermediate segment is obtained.
9 At least one distal tip electrode is preferably confined to the distal segment which can have
10 a straight axis extending distally from the intermediate segment. [The curvature of the
11 proximal segment and the bending angle of the intermediate segment are independently
12 selectable. The axial alignment of the distal segment with respect to the nominal axis of
13 the proximal shaft section of the catheter body can be varied between substantially axially
14 aligned (0° curvature) in an abrupt knuckle bend through a range of about -90° to about
15 +180° within a bending radius of between about 2.0 mm and 7.0 mm and preferably less
16 than 5.0 mm. The proximal segment curve can be independently formed in a range of
17 about -180° through about +270° with respect to the axis of the proximal shaft section to
18 provide an optimum angular orientation of the distal electrode(s). [The distal segment can
19 comprise a highly flexible elongated distal segment body and electrode(s) that conform
20 with the shape and curvature of the heart wall.]